

# Prothrombin Times and the International Normalized Ratio (INR)

The International Committee for Standardization in Hematology (ICSH) and the International Committee on Thrombosis and Hemostasis (ICTH) have recommended that laboratories adopt the International Normalized Ratio (INR) to provide a more standardized system of reporting prothrombin times for the monitoring of oral anticoagulant therapy. Reported INR values correct for the differences found in the various reagents and methods used, and therefore, can provide more reliable and meaningful therapeutic values and improve inter-laboratory correlation. An INR for a given patient is calculated using the following formula:

$$\text{INR} = \frac{\text{Patient PT (sec)}}{\text{Normal PT (sec)}}^{\text{ISI}}$$

ISI = The International Sensitivity Index of the thromboplastin used in the local laboratory as determined by the reagent manufacturers.

## **RECOMMENDED THERAPEUTIC RANGES:**

Internal INR guidelines for acceptable oral anticoagulant effect were published in the February 2012; 141(2\_suppl) Antithrombotic Therapy and Prevention of Thrombosis, 9<sup>th</sup> ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines. These guidelines are as follows:

<b>Indication</b>	<b>INR</b>
Prophylaxis/treatment of DVT/PE (Venous Thrombosis, Pulmonary Embolism)	2.0-3.0
Prevention of systemic embolism	2.0-3.0
Bioprosthetic heart valves (mitral position)	2.0-3.0 x 3 months
Acute MI (myocardial infarction)	2.0-3.0
Valvular heart disease (mitral)	2.0-3.0
Atrial fibrillation	2.0-3.0
Mechanical prosthetic valve	
Aortic position	2.0-3.0
Mitral position	2.5-3.5
Both positions	2.5-3.5
Thrombosis and genetic hypercoagulable disease	2.0-3.0